

## 5.5 Find domain and range of functions.

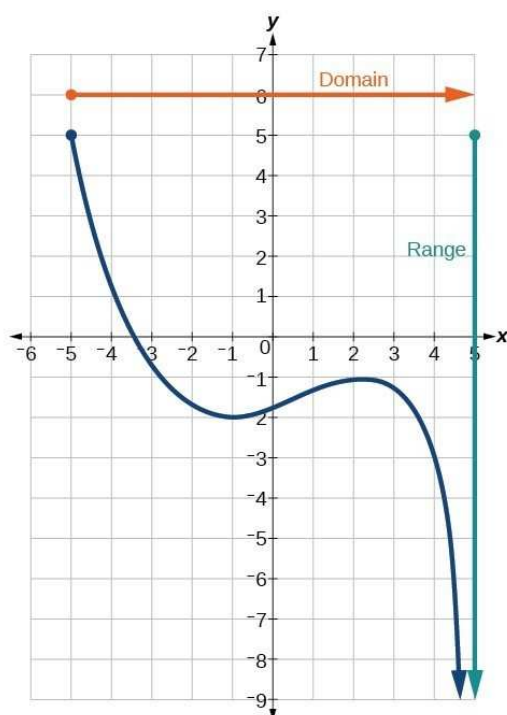
1. State the domain and range of the following relation. Is the relation a function?  
 $\{(2, -3), (4, 6), (3, -1), (6, 6), (2, 3)\}$

It \_\_\_\_\_ a function. Every \_\_\_\_\_ goes to only one \_\_\_\_\_. Every \_\_\_\_\_ or \_\_\_\_\_ is different.

To write the domain, list all the x-values (in “squiggly” or curly brackets), without duplication.  
 To write the range, list all the y-values, without duplication.

Domain \_\_\_\_\_ Range \_\_\_\_\_

### 2. To find the domain and range of a graph..



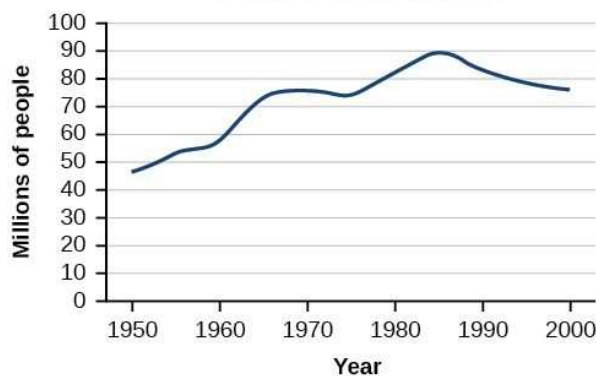
**To find the domain, look only at the x values.** What x values are part of the graph (even part of the graph were it to extend beyond what you can see)? Try to visualize what are all the possible x values of the graph?

In the example to the left, the graph starts at -5 (there's a dot). So no x values less than -5 are possible. But then the graph continues to the right and has an arrow. That means the graph continues to infinity. Look **ONLY** at the x-values. You can see that after -5, ALL x values are in the graph. All real numbers starting at -5 and up can be found on the graph. We can write the domain informally as:  $\{x \geq -5\}$

Similarly, for the **range**, now look at **y-values**. Visualize what are all the possible y values that could be on the graph?

We can see that y starts at 6 (at the dot) and then the numbers get smaller. We can write the range informally as  $\{y \leq 5\}$ .

Try it a) **World Population Increase**

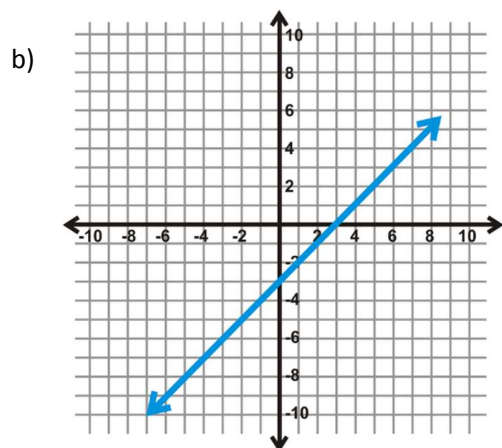


Domain:

\_\_\_\_\_

Range:

\_\_\_\_\_



c) Find the domain and range for the following function

